

SECTION IV.—RIVERS AND FLOODS.

RIVERS AND FLOODS, OCTOBER, 1918.

By ALFRED J. HENRY, Meteorologist in Charge.

[Dated: Weather Bureau, Washington, Nov. 30, 1918.]

Heavy rains in upper Vermont and New Hampshire caused a moderate flood in the Connecticut River at White River Junction, Vt., but no damage resulted.

Rains were generally heavy throughout South Carolina, and in western North Carolina they were excessive during the last week of the month, causing most of the streams in the western portion of South Carolina to rise rapidly. In the mountainous districts stages of 5 to 8 feet above flood stages were reached. In the lower stretches of the rivers the crests were only slightly above flood stages. The greatest damage was done in the vicinity of Greenville and Spartansburg, where the loss is estimated at \$270,000. The total loss for the State is estimated as follows: Buildings, factories, roads, bridges, \$219,000; crops, \$162,000; live stock, \$6,000. The value of property saved by warnings is placed at \$83,000.

In Georgia, the only places where a flood stage were reached was at Carlton, on the Broad River and Norcross on the Chattahoochee. No damage was reported.

Flood stages are of rare occurrence in the east Gulf States during the autumn; but the heavy rains of the latter part of October caused many of the streams in the Montgomery and Mobile, Ala., districts to overflow, and the streams in western Mississippi were about bank full. In the Mobile district loss to crops was estimated at \$87,000; stock and movable property, \$1,500; and wages, \$1,500. It is estimated that property valued at \$25,000 was saved by timely warnings. In Mississippi but little damage was sustained except through the washing of roads by heavy rains. This damage was estimated at \$250,000.

Rains were excessive in the Asheville district—7.31 inches fell at Asheville and 6.62 at Penrose, N. C., during 24 hours ending 8 a. m. of the 25th. The river rose rapidly at these places and flood stages were reached as far down as Knoxville, Tenn. Roads and bridges were reported damaged to the extent of \$14,000; crops, \$9,000; and movable property, \$250. Much property was reported as saved by timely warnings.

In the Cincinnati, Ohio, district, the New River was slightly above flood stage at Ivanhoe and Radford, Va.

In Texas, the Rio Grande was in flood at Rio Grande city on the 22d and the Guadalupe at Victoria on the 30th. The Trinity was above flood stage on the 24th and 28th. No damage reported.

The following report of the effects of heavy rains in the vicinity of Juneau, Alaska, during September, 1918, is submitted by Mr. M. B. Summers, meteorologist:

A disastrous flood occurred in the city of Juneau and vicinity on September 26, 1918, as a result of heavy rains during the 25th and 26th. Rain began shortly after midnight of the 24th–25th and continued without cessation until the early morning of the 27th, a total of 7.41 inches falling at Juneau during the 25th and 26th. The greatest 24-hour amount during this period was 5.54 inches from 5:34 p. m. of the 25th to 5:34 p. m. of the 26th, normal time. The fall was still heavier however, at Perseverance, 4 miles east of Juneau and at the head of Gold Creek, a stream that drains mountain slopes over 3,000 feet in height and that empties into Gastineau Channel through the tideflat section of Juneau. At Perseverance 7.40 inches of rain fell in the 24

hours ending at 4 p. m. of the 26th, and 2.80 inches in the preceding 24 hours.

As a result of these heavy rains, Gold Creek rose to flood height and overflowing its banks in its lower reaches, inundated a large part of the tideflat portion of the city. The height and swiftness of the current wore away the banks of the stream and changed its course somewhat, carrying away six dwelling houses. A number of other dwellings were flooded, as was also the hospital of the U. S. Bureau of Education from which patients and nurses were rescued in a boat.

The heavy rains also caused a slide on the slope of the mountain above Gastineau Avenue, on the opposite side of the city, which resulted in the destruction of four dwellings. A torrent of water followed the slide and flooded the Gastineau Hotel and W. R. Wills's store, these being at the foot of the slope and immediately below the houses destroyed. A number of slides occurred along the highway between Juneau and Perseverance, blocking that thoroughfare to such an extent that it probably can not be reopened before next summer. The Juneau city water system was put out of commission by slides that carried away a portion of the flume conveying water to the reservoir, thereby depriving the greater portion of the city of water for nearly a week. The same trouble was experienced by the Alaska Electric Light & Power Co., and as a result the city was without electric light or power for two days. As practically all power used in the city is electric, and there being no gas system, the loss and inconvenience from suspension of operation of the power plant was considerable. The Alaska Juneau Mining Co. suffered considerable damage to the electric railroad connecting the mine and the mill, a slide taking out a section of the steel trestle near the mill. The flume conveying the water supply of the mill was also damaged. The road to Thane was closed by slides and a bridge on the Mendenhall road carried away.

Fortunately no lives were lost, the effect of the rains being confined to damage to property, the suspension of mines, shops, and public utilities, and to the general inconvenience suffered by the public. Estimated monetary loss sustained, \$175,000.

TABLE I.—Flood stages in the North Atlantic drainage during October, 1918.

River and station.	Flood stage.	Above flood stages—dates.		Crest.	
		From—	To—	Stage.	Date.
<i>Connecticut:</i>	<i>Feet.</i>			<i>Feet.</i>	
White River Junction, Vt.	13	7	9	14.5	8
<i>Unadilla:</i>					
New Berlin, N. Y.	8	7.5	31

TABLE II.—Flood stages in the South Atlantic drainage during October, 1918.

River and station.	Flood stage.	Above flood stages—dates.		Crest.	
		From—	To—	Stage.	Date.
<i>Santee:</i>	<i>Feet.</i>			<i>Feet.</i>	
Rimini, S. C.	12	28	(*)	16.2	31
Ferguson, S. C.	12	31	(*)	12.1	31
<i>Catawba:</i>					
Mount Holly, N. C.	15	27	27	16.0	27
Catawba, S. C.	11	27	28	18.5	27
Do.	11	31	(*)	14.2	31
<i>Wateres:</i>					
Camden, S. C.	24	28	(*)	30.5	28
<i>Congaree:</i>					
Columbia, S. C.	15	27	29	20.7	28
<i>Broad:</i>					
Blairs, S. C.	15	27	28	22.4	27
Do.	15	31	(*)	16.7	31
<i>Saluda:</i>					
Peizer, S. C.	7	25	27	18.0	27
Do.	7	31	(*)	8.8	31
Chappells, S. C.	14	27	29	22.6	28
<i>Savannah:</i>					
Augusta, Ga.	32	29.8	27
<i>Broad:</i>					
Carlton, Ga.	11	25	25	13.5	25
<i>Chattahoochee:</i>					
Norcross, Ga.	16	31	(*)	18.1	31

* Continued into November.

TABLE III.—Flood stages in East Gulf drainage during October, 1918.

River and station.	Flood stage.	Above flood stages—dates.		Crest.	
		From—	To—	Stage.	Date.
<i>Chattahoochee:</i>	<i>Feet.</i>			<i>Feet.</i>	
Norcross, Ga.....	16	31	(*)	18.1	31
<i>Coosa:</i>					
Lincoln, Ala., lock No. 4.....	17	30	(*)	19.0	31
<i>Etowah:</i>					
Canton, Ga.....	11	30	(*)	18.9	30
<i>Cuhaba:</i>					
Centerville, Ala.....	25	30	(*)	32.7	30
<i>Tombigbee:</i>					
Demopolis, Ala.....	39	31	(*)	42.1	31
<i>Black Warrior:</i>					
Tuscaloosa, Ala.....	46	31	(*)	51.3	31
<i>Pearl:</i>					
Jackson, Miss.....	20			19.3	31

* Continued into November.

TABLE V.—Flood stages in West Gulf drainage, during October, 1918.

River and station.	Flood stage.	Above flood stages—dates.		Crest.	
		From—	To—	Stage.	Date.
<i>Trinity:</i>	<i>Feet.</i>			<i>Feet.</i>	
Dallas, Tex.....	25	23	24	30.0	24
Do.....	25	27	29	29.0	28
<i>Rio Grande:</i>					
Eagle Pass, Tex.....	16			15.6	22
Rio Grande City, Tex.....	15	23	24	17.8	24
<i>Gundalup:</i>					
Victoria, Tex.....	16	29	30	19.2	30

MEAN LAKE LEVELS DURING OCTOBER, 1918.

By UNITED STATES LAKE SURVEY.

[Dated: Detroit, Mich., Nov. 5, 1918.]

The following data are reported in the "Notice to Mariners" of the above date:

Data.	Lakes.*			
	Superior.	Michigan and Huron.	Erie.	Ontario.
Mean level during October, 1918:	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
Above mean sea level at New York.....	602.49	581.18	572.29	246.00
Above or below—				
Mean stage of September, 1918.....	—0.05	—0.32	—0.18	—0.20
Mean stage of October, 1917.....	—0.14	—0.16	—0.55	—0.68
Average stage for October, last 10 years.....	—0.14	+0.77	+0.21	+0.18
Highest recorded October stage.....	—1.07	—1.76	—1.41	—1.81
Lowest recorded October stage.....	+0.91	+1.58	+1.49	—2.33
Average relation of the October level to—				
September level.....		—0.2	—0.3	—0.4
November level.....		+0.2	+0.3	+0.3

* Lake St. Clair's level: In October, 575.50 feet.

TABLE IV.—Flood stages in Mississippi drainage (Ohio Basin) during October, 1918.

River and station.	Flood stage.	Above flood stages—dates.		Crest.	
		From—	To—	Stage.	Date.
<i>New:</i>	<i>Feet.</i>			<i>Feet.</i>	
Ivanhoe, Va.....	15	26	28	16.0	28
Radford, Va.....	14	26	28	16.5	28
Narrows, Va.....	20			18.0	28
<i>Tennessee:</i>					
Knoxville, Tenn.....	12	27	27	12.0	27
Do.....	12	31	(*)	18.7	31
<i>French Broad:</i>					
Penrose, N. C.....	13	25	27	13.7	28
Do.....	12	29	(*)	19.5	30
Asheville, N. C.....	4	25	(*)	8.0	30
Dandridge, Tenn.....	12	30	(*)	14.0	30
<i>Big Pigeon:</i>					
Newport, Tenn.....	6	30	(*)	8.3	30
<i>Holston, North Fork:</i>					
Mendota, Va.....	8	26	28	8.0	28
Do.....	8	30	(*)	9.0	30
<i>Little Tennessee:</i>					
McGhee, Tenn.....	20			19.6	30

* Continued into November.